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**The
National
Energy
Program:
Update 1982**

A Summary



Energy, Mines and
Resources Canada

Energie, Mines et
Ressources Canada

Canada

METRIC CONVERSION TABLE

1 cubic metre (oil)	=	6.293 barrels
1 cubic metre (natural gas)	=	35.30 cubic feet
1 litre	=	0.2200 gallons
1 tonne	=	1.102 short tons
1 hectare (10,000 square metres)	=	2.471 acres
1 joule	=	0.0009482 Btu
1 petajoule	=	10^{15} joules
1 exajoule	=	10^{18} joules

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A Summary

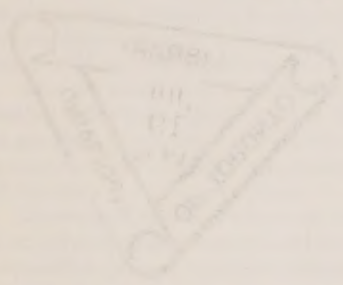


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Note: Please refer to **The National Energy Program: Update 1982** for more complete and authoritative description of measures outlined in this summary

OVERVIEW

The National Energy Program of October 1980 introduced a comprehensive set of measures to achieve three objectives:

- security of oil supply
- opportunity for Canadians to participate in their oil and gas industry
- fairness in the distribution of energy benefits and burdens.

It will be clear that much progress has been made toward all three of these objectives. Much remains to be done, but Canadians can respond to the measures in the Program in the knowledge that the energy goals announced in October 1980 are well within Canada's capacity to achieve in this decade.

Since the launching of the NEP, there have been many positive events, including better-than-expected progress in curbing Canadian oil consumption and costly oil imports. Canada's oil needs in 1990 are expected to be 18 per cent lower than in 1980 — the equivalent of production from two-and-a-half Syncrude-sized oil sands plants.

Far-reaching agreements between the Government of Canada and the oil and gas producing provinces have established a pricing system that is fair to consumers, producers and governments alike. Lower-than-world prices for crude oil and natural gas represent an enormous price restraint over the five-year life of the agreements. Even assuming only a moderate world price increase, the ceiling on basic price increases would represent a \$2,500 benefit to every Canadian. An even higher benefit figure could result if world prices should jump, since Canadian prices are determined in Canada.

At the same time, new challenges have arisen, notably from the altered and uncertain world oil situation. The climate of uncertainty, coupled with troublesome trends in the world economy, have worked against important energy megaprojects in Canada's tar sands and elsewhere.

Eighteen months after the NEP was introduced, the Government of Canada has conducted a thorough review* of the many important sets of NEP action initiatives: stimulating new frontier and other oil development; aiding furnace conversion away from oil; extending natural gas availability; supporting energy conservation; ensuring fairness to consumers as oil prices increase; enlarging Canadian participation in future oil development; and many more.

The results so far, added together, indicate that we as a nation are ahead of schedule in curtailing our oil use, and in many other aspects of the NEP.

*The National Energy Program: Update 1982.

With regard to oil supply, there is encouraging evidence to show that frontier oil will play a larger role than had been forecast in bringing about the desired 1990 balance between oil supply and demand.

With total energy demand falling by 2 per cent in 1981, crude oil demand dropped by 7 per cent during the year. Natural gas demand fell comparatively little, reflecting the rapid pace of NEP-funded conversions from furnace oil to natural gas. Conversion to electric heating contributed to a slight increase in national electrical demand, and renewable energy sources also proved popular substitutes for oil. This is an excellent start toward achieving the NEP off-oil goals, and the basic trends are expected to continue even when economic growth picks up.

The following table indicates how Canada's requirement for imported oil is projected to decrease.

Canada's Oil Imports (10 ³ m ³ /d)				
	1979	1980	1981	1982 Forecasts
Demand	290	284	265	246 - 256
Production	256	244	220	213 - 215
Stock Change	4	2	-4	-7
Net Oil Imports ⁽¹⁾	38	42	41	26 - 34
Net Oil Imports under International Energy Agency definition ⁽²⁾	11	18	19	3 - 11

⁽¹⁾Expressed as thousands of barrels a day, net oil imports are

1979	1980	1981	1982
239	265	258	164 - 214

⁽²⁾Includes propane, butane and ethane

However, recognizing that the oil industry faces new issues, the Government of Canada is making certain adjustments within the overall framework of the NEP. These will improve the ability of the oil industry, especially smaller companies, to step up oil exploration in western Canada. Measures to alleviate the problem of shut-in oil will be adopted. And supplementary action will be taken in support of the nationwide use of natural gas, one of Canada's most abundant energy sources.

Another of Canada's energy strengths is electricity, and the Government of Canada will seek to promote further hydro-electric expansion, and will seriously consider requests to support the proposed Western Grid to



Coal is stockpiled by the ton at an electrical power generating plant in Wabamung, Alberta.

Energy, Mines and Resources Photo.

serve the three Prairie provinces. The Government also believes it is desirable to maintain a strong industry to produce nuclear-powered electrical generating plants.

In the broadest sense, Canada continues to make excellent progress in the development and use of its abundant energy resource base.

Canada has been a net exporter of energy since 1969. Revenues from exports of natural gas, electricity and other energy forms have far exceeded our payments for imported oil. The overall balance improved by \$73 million in 1981, to \$2.4 billion, despite a \$803 million increase in the cost of net oil imports.

With conventional Western Canadian oil reserves continuing the decline evident for over a decade, it remains extremely important to stimulate alternative oil resources, and to continue to curtail oil demand.

Only by a continuing effort can Canada avoid sharply increased dependence on foreign oil imports. The original NEP measures, and those being added, strongly support this effort.

While the world oil situation has changed markedly since 1980, the changes do not give any guarantee of stable world oil prices over the long, or even the medium, term.

A very severe decline in production by the Organization of Petroleum Exporting Countries has put pressure on OPEC's ability to maintain its control over world prices, which were extremely soft in 1981. Nevertheless, present indications are that OPEC will hold the price at current levels for some time.

No one can predict with certainty the future course of world oil prices. However, there seems to be a preponderance of factors leading to higher,

rather than lower, prices. These include the decline, since the mid-70s, of world conventional oil reserves; the basic dependence of the consuming countries' economies upon oil; and the inherent instability of the Middle East region.

While a large band of uncertainty must clearly surround any forecast, the Government is assuming that world prices will remain constant in nominal terms until the end of 1983, and then rise 2 per cent a year in real terms. Such a development would represent a significant erosion of world prices from their 1981 peak. Under this scenario, oil prices at the end of 1983 would be at the same level in real terms as they were in 1979.

GOALS AND ACHIEVEMENTS

A more detailed account of progress on NEP implementation follows. Programs are covered under the three major headings: security, opportunity and fairness.

1. Security

To help ensure energy security for all Canadians, the National Energy Program contains many initiatives aimed at reducing our oil demand, while at the same time increasing our supplies of domestic oil. These include measures to encourage substitution away from oil, conservation and the proper development of our frontier oil and gas reserves.

A year and a half after the introduction of the NEP, more than 70 per cent of the new programs launched are now fully operational, while others await only the completion of industry studies, action by provincial governments, or the passage of legislation by Parliament. Continuing progress will ensure freedom from dependence on foreign oil imports.

With respect to substitution, the NEP set as a target the reduction of the use of oil in each of the residential, commercial and industrial sectors to no more than 10 per cent of the total energy used by 1990. In order to ensure this target is achieved, several NEP programs have been undertaken:

- The Canada Oil Substitution Program (COSP). This program provides grants of up to \$800 for households or businesses that switch from oil to gas, electricity, or other energy forms. Nearly 200,000 Canadian households or businesses have converted under COSP, and almost 600,000 cubic metres of oil have been saved through conversions funded to date;
- The Distribution Systems Expansion Program (DSEP). DSEP provides grants to utilities to encourage expansion into new market areas. In the next year alone, this program will make gas service available to 52,000 households and firms, contributing to a saving of 130,000 cubic metres of fuel oil;
- A lower-than-oil price for natural gas. Under the terms of the agreement with the Province of Alberta, natural gas is made an attractive alternative fuel because its price is set at two-thirds that of oil;
- The Propane Vehicle Grant Program. This program provides grants of \$400 towards the conversion of new commercial and farm vehicles to propane. It is expected that between 12,000 and 15,000 conversions

will be funded this year and that the program will easily meet its goal of 100,000 propane-powered vehicles by 1985;

- Conversion to compressed natural gas (CNG). Under the NEP, an initial \$1.3 million has been allocated to assist in the conversion of 1,500 vehicles to CNG. To further promote CNG as a transportation fuel, the federal government will consider contributions to a portion of



The noon-day sun shines atop mammoth towers transmitting electrical power from Churchill Falls, Labrador hydro facilities.

NFB Photothèque Photo.

the cost of large fueling station compressors installed in Canada over the next two to three years;

- Federal building conversions. In order to save taxpayers' dollars and to demonstrate a commitment to off-oil objectives, the Government of Canada has accelerated the pace of federal building off-oil conversions. The target is to cut fuel oil consumption by 40 per cent over 11 years. In 1981-82 alone, federal conversions resulted in the displacement of nearly 22,000 cubic metres of oil.

Among the principal achievements of the NEP with respect to energy conservation, are the following:

- The expanded Canadian Home Insulation Program (CHIP). This cornerstone of the NEP's conservation policy has provided more than 1.2 million Canadians with grants covering 100 per cent of insulation material costs up to \$350, and one-third of labour costs up to \$150. In March 1982, the Program was expanded so that about 80 per cent of Canadian residences are now eligible for insulation assistance;
- Conservation in new housing. Six million dollars in federal funds have been allocated to support the construction of 300 to 500 super-energy-efficient housing units in Canada. Between 30 and 50 of these units will be built this year, with construction of the remainder commencing in the next building season. Energy consumption will be about 25 per cent of that of conventional homes, and the technology could initiate a revolution in Canadian housing construction techniques;
- Conservation and Renewable Energy Projects. A total of \$46 million in federal grants has been paid to Canadian industry in support of 94 bio-energy and conservation projects, and over \$38 million in federal funding has been provided to 235 demonstration projects using renewable energy or conservation technologies;
- Industrial and commercial conservation. Under the NEP, the federal government works closely with industry in increasing the efficiency of energy use in the Canadian business community. Sixteen industrial energy conservation task forces have been established in order to increase the awareness of management and employees of the cost savings possible through energy management techniques. Also, a joint federal-provincial National Energy Audit Program provides on-site energy inspection service to industrial and commercial organizations, churches, and public institutions. The audit service uses special "Energy Bus" vehicles equipped with a computer system and sophisticated energy measuring devices. In 1981 alone, industrial and commercial conservation efforts have resulted in an energy saving of at least 8 million cubic metres of oil;
- The Motor Vehicle Fuels Consumption Standards Bill. Currently before Parliament, this Bill provides for a voluntary system for monitoring progress towards an energy-efficient transportation sector. In 1990, it is estimated that conservation measures in the transportation sector could result in savings of almost 47,700 cubic metres of oil daily, relative to

the consumption that would result from using automobiles at 1979 standards of efficiency;

- **Municipal Conservation.** Under the NEP, the National Energy Audit Program makes available to schools and hospitals advice on energy conservation. Commercial task forces have already been set up providing valuable information services to hospitals, and the intention is to extend the program to cover other municipal institutions. In addition, the Building Technology Support Program supports intensive research into energy use and conservation in buildings, and the results of this research will be made freely available to Canadian municipalities.

The NEP also includes a range of initiatives designed to respond to the special energy circumstances of Atlantic Canada, which has a high dependence on imported oil because of the current unavailability of natural gas and reasonably-priced electricity. Among the Atlantic oil demand reduction initiatives are the following:

- **Enhanced conservation grants:** It provides grants of up to \$800 for investments which reduce oil heating costs in Prince Edward Island and Newfoundland;
- **The Atlantic Energy Conservation Investment Program.** This program, with a five-year funding level of \$40 million, provides grants to firms for investments which increase energy efficiency;
- **The Off-Oil Utility Fund.** This fund has provided support for a study on the technical, economic and environmental effects of the conversion of



Oil drilling crew puts down casings at a new well in the Judy Creek field in Alberta.

Imperial Oil Photo.

the Coleson Cove generating station to coal. The first two stages of this study are now complete and have identified a conversion option that would result in oil savings of almost 9 million cubic metres of oil over a period of 12 years;

- The Coal Utilization Sub-Program. This program provides financial assistance for new efficient and environmentally acceptable coal utilization technologies. Projects qualifying for support include an atmospheric fluidized-bed twin boiler heating plant at Summerside, P.E.I., a pilot plant demonstrating coal-water process technology at Sydney, N.S., and a fluidized bed test facility at Point Tupper, N.S.

Energy conservation and reduction of oil consumption have special meaning for those in the Yukon and Northwest Territories, where energy costs are generally higher than in most other parts of Canada. The NEP has established several initiatives to help northerners conserve and reduce oil consumption:

- Grants for enhanced conservation or furnace retrofit;
- CHIP Grants for home insulation;
- The Remote Community Demonstration Program, which provides assistance in the development of innovative methods of replacing oil-based energy systems.

The NEP recognizes the important contribution that research and development can make to Canada's long term energy security, particularly in the areas of alternatives to gasoline, increased efficiency of energy use and new energy sources.

Under the NEP the Government of Canada is allocating nearly \$290 million in research and development funds for 1982-83. This represents an increase in funding of over 90 per cent in four years, and it will support new initiatives as well as continued research into conventional energy technologies such as nuclear power.

Also, the federal government will assign increased priority to the development of new technologies and processes to enhance oil production from new discoveries of domestic oil.

The oil and gas potential of Canada's offshore and areas north of the 60th parallel is substantial. The latest estimates of the Geological Survey of Canada place the total potential of the Canada Lands at 4.6 billion cubic metres of oil and 8.5 trillion cubic metres of natural gas. The established reserves at the Hibernia oil field alone total 160 million cubic metres. Under the NEP, the following steps have been taken to ensure that these domestic resources make a significant contribution to our energy security:

- A new management regime. The new Canada Oil and Gas Act requires that exploration agreements covering all outstanding interests in the Canada Lands be negotiated with oil and gas companies by March 1983. Two agreements under this new system have already been concluded and others are being actively negotiated;
- The Canada Oil and Gas Lands Administration (COGLA). Under the Canada Oil and Gas Act, this federal government agency is responsible for ensuring that resource development in the Canada Lands is con-

ducted safely, efficiently and with a maximum of protection of both native rights and the environment;

- The Canada/Nova Scotia Agreement. This agreement represents a major step toward national energy security and increased economic prosperity for Nova Scotia. It provides a unified management regime that greatly increases the prospect that Sable Island gas production and related economic benefits will be flowing to Nova Scotians well before the end of the decade;
- The Government of Canada remains prepared to negotiate management and revenue sharing arrangements with the governments of Newfoundland and British Columbia. These agreements, like the agreement with Nova Scotia, would provide for increased national energy security and maximum regional economic benefits.

2. Opportunity

A. Canadianization

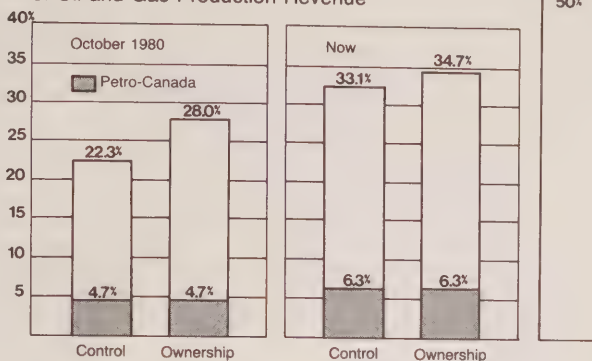
One of the major objectives of the National Energy Program is to increase the participation by Canadians in their oil and gas industry. The Government of Canada has established three specific goals: At least 50 per cent Canadian ownership of oil and gas production by 1990, Canadian control of a significant number of larger oil and gas firms and an increase in its own share of the industry. Progress has been very substantial.

Canadian ownership of oil and gas production revenues has risen 6.7 percentage points to 34.7 per cent. Canadian control of the producing industry has increased to 33.1 per cent. Major corporate acquisitions since October 1980 include:

- The purchase of Petrofina Canada by Petro-Canada in 1981, increasing the level of federal public sector ownership from 4.7 per cent to 6.3 per cent. Petro-Canada is now the fourth largest oil and gas company in Canada;
- The purchase of Hudson's Bay Oil and Gas by the privately-owned, Canadian-controlled Dome Petroleum Ltd., making it the seventh largest petroleum corporation in Canada;
- The formation of a new Canadian-owned oil and gas firm, Canterra Energy Ltd., by the Canada Development Corporation. CDC amalgamated the petroleum interests of Aquitaine Co. Ltd. with Texasgulf and CDC Oil and Gas Ltd. to form Canterra, now the 12th largest oil and gas firm in Canada;
- Another 10 Canadian companies spent nearly \$2.7 billion in 1981 to purchase the assets of foreign-owned firms.

Canadian Ownership and Control of Oil and Gas Production Revenue

1990 Target



Major Corporate Acquisitions since October 1980

<i>Name of Acquiring Company</i>	<i>Acquisition Date</i>	<i>Company Acquired</i>	<i>Purchase Price (\$ millions)</i>
1. Petro-Canada	Feb. 1981	Petrofina	1,450
2. Sulpetro	April 1981	CanDel Oil Co.	536
3. United Canso Oil and Gas Ltd.	April 1981	Great Basins Petroleum Ltd.	164
4. Dome Petroleum	June 1981	Hudson's Bay Oil and Gas (52%)	2,000
5. Fairweather Gas Ltd.	June 1981	Alamo Petroleum Ltd. }	213
6. Fairweather Gas Ltd.	June 1981	Amax Petroleum Ltd. }	
7. Husky Oil Ltd.	June 1981	Uno-Tex Petroleum Corp.	371
8. Drummond Petroleum Ltd.	June 1981	Union Texas of Canada Ltd.	101
9. Canada Development Corp.	June 1981	Aquitaine Company of Canada Ltd.	1,600
10. Turbo Resources Ltd.	July 1981	Merland Explorations Ltd. (50.75%)	132
11. Ontario Energy Corp.	Oct. 1981	Suncor Ltd. (25%)	650
12. Oakwood Petroleum Ltd.	Oct. 1981	Quasar Petroleum Ltd. (81%)	43
13. Aberford Resources Ltd.	Feb. 1982	Marathon Petroleum Canada Ltd.	265
14. Francana Oil and Gas Ltd.	May 1982	Pan Ocean Oil Ltd. Sceptre Resources Ltd.	150
			<u>\$7,675</u>

Total change in Canadian ownership to date 6.72%

Total change in Canadian control to date 10.83%

B. Incentives

To ensure that Canadians derive important economic benefits from future oil and gas development, the Government of Canada took concrete steps to encourage greater Canadian investment. It introduced the Petroleum Incentives Program to provide direct incentive payments to encourage Canadian-owned and controlled firms to explore. Under the re-structured incentive system, the fiscal and price terms offered to foreign-owned firms compare favorably to those offered around the world. The program was fully endorsed by Canada's three westernmost producing provinces — British Columbia, Alberta and Saskatchewan. Legislation which will authorize hundreds of millions of dollars in PIP grants is now before Parliament.

The cooperative movement and the Government of Canada have agreed to work together to develop a vehicle for Canadians to invest in their energy industry. The federal government will invest up to \$100 million over the next five years to match investment funds generated by three new cooperative organizations:

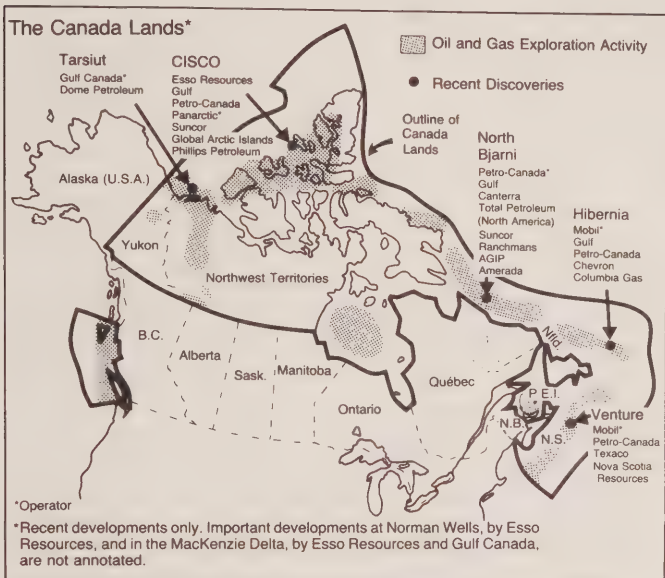
- The Cooperative Energy Corporation, a holding company;
- The Cooperative Energy Development Corporation, an oil and gas exploration and development company;
- The Cooperative Energy Investment Fund, a trust fund.

The most dramatic Canadianization moves have been made by the private sector. With generous PIP grants available, many Canadian firms are "farming in" on prospective lands controlled by foreign firms. This means that by paying part of the exploration costs, these Canadians will earn a share of future production. Under the previous tax-based system, Canadians financed the exploration as either consumers or taxpayers, but ownership rested with the existing, mainly foreign-owned firms.

C. Canada Benefits

The Canada Oil and Gas Act, proclaimed in March 1982, provides the framework for petroleum exploration and production on the Canada Lands. The new legislation gives the Government of Canada more control over the pace of the industry's search for oil and gas. It also emphasizes Canadian participation. Among the benefits to Canadians are:

- A 25 per cent interest reserved for the Government of Canada in Canada Lands;
- A requirement that there be 50 per cent Canadian ownership of future production on the Canada Lands.
- A requirement that all companies submit Canada benefits plans so that Canadian firms can have full and fair access on a competitive basis to industrial and employment benefits arising from exploration programs.



3. Fairness

A fundamental goal of the National Energy Program is to establish a pricing and revenue system in oil and gas that is fair to the consumer, the petroleum industry, the producing provinces and the Government of Canada. With the signing of comprehensive federal-provincial pricing agreements, a fair framework has been firmly established. Agreements between the Governments of Canada and four producing provinces — Alberta, British Columbia, Saskatchewan, and Nova Scotia — in the past year represent an important breakthrough.

With the provincial agreements, now as never before the oil and gas industry has a stable framework of intergovernmental accords extending at least five years.

ISSUES AND ACTION

1. Natural Gas

Natural gas, one of Canada's great energy strengths, now serves domestic markets from the mainland of British Columbia to southern Quebec. Over the past two decades, extensive exploration efforts in the western basin and the Canada Lands have resulted in the addition of significant reserves.

The cumulative additions of gas reserves for the period 1976-1980 have been 31 exajoules (EJ), while cumulative production has been 13 EJ. While this has strengthened Canada's energy position, it has posed a problem for the natural gas industry. The industry has carried the financial burden of its expanding inventory and has slowed the pace of its gas exploration activity.

To maintain an aggressive exploration industry, and continue the search for both oil and gas, and further off-oil goals, the Government of Canada will take the following additional steps:

- The Industrial Gas Market: For a period to be specified, the Government will meet 50 per cent of the cost of converting residual fuel oil boilers in industrial, commercial, and private institutions to gas effective June 1, 1982, or the date gas becomes available. In order to reduce competition from residual fuel oil, the Government will require importers of residual oil to obtain a licence from the National Energy Board, also effective June 1, 1982, and the National Energy Board will consider long-term or open export licences for residual fuel oil from Quebec and the Atlantic provinces.
- Expand gas to the Maritimes: The Government of Canada will provide an interest-free loan of \$45 million to cover the cost of engineering and survey work for the Trans-Quebec and Maritimes (TQM) Pipeline, pending a decision on whether gas from offshore Nova Scotia can be used extensively in Eastern Canadian markets. In addition, propane will become an eligible fuel under the Canada Oil Substitution Program, retroactive to October 28, 1980; these actions are part of a broad policy to assure that Maritime oil consumers have access to other fuel options — initially propane, and later natural gas.
- Expand the Natural Gas Infrastructure: To encourage the rapid and efficient construction of branch lines off the TQM, the Government will establish a "laterals fund" equal to the currently estimated total cost of the branch lines in Quebec. It will also be prepared to discuss alterna-

tives to the proposed Vancouver Island Pipeline with the British Columbia government;

- Exports: Even with the stimulus to the domestic gas market given by the National Energy Program, there is a possibility that substantial quantities of gas will remain surplus to domestic requirements. The National Energy Board has recently developed a new surplus formula designed to provide assured protection of future Canadian gas needs while maximizing the opportunities for the export of that gas deemed surplus. The Government supports this formula. Regarding the possibility of further exports, the Government of Canada takes the following positions:
 - (a) that it favours regulatory and commercial measures to increase the utilization of gas exports already committed to traditional markets and supports current efforts to market Canadian gas in U.S. and other regions that are regarded as offering reliable new markets;
 - (b) that gas export prices will over time be determined in a way that recognizes its value as a substitute for oil, but there will be continuing flexibility in this approach.

2. Electricity

Canada's abundant supplies of electrical energy are playing a crucial role in the Government's efforts to substitute away from oil and provide energy security for the country. About 35 per cent of those Canadians who have switched off oil since the National Energy Program was announced, have converted to electricity. Utilities are currently expanding capacity to meet projected future demands, both for the domestic market and to exploit export opportunities.

The Government continues to encourage interconnection of provincial electrical systems. Accordingly, the Government will give serious consideration to a request by Manitoba for a financial contribution to the proposed Western Grid for the three Prairie provinces.

Canada enjoys another valuable asset in its ability to generate large amounts of electricity — the CANDU nuclear option. The CANDU reactor is demonstrably the best nuclear electrical generating package in the world. CANDU plants in Ontario have consistently set world records for performance and low cost.

However, it has been difficult to sell these plants in today's market, given lower forecasts for electrical demand and strong foreign competition. Therefore, new export sales are by no means assured.

The Government of Canada believes that the CANDU system should be preserved, if only to keep Canada's nuclear options open in an uncertain energy world. It has provided generous financial support to the CANDU,

where the power is for domestic use. It is prepared to consider some form of support for future nuclear plants — such as a possible Lepreau 2 plant — to allow plants to be built initially for sales to the United States, but for Canadian use over the long term.

3. Shut-In Oil

The Government of Canada believes it is essential that Canadian domestic oil should be used to meet Canadian needs, and is concerned about the high level of shut-in oil that has existed in recent months.

Although initially the shut-in reflected the influence of additional imports by eastern refiners, which were arranged when the Government of Alberta imposed production restrictions, the long-run cause has been, and will continue to be, the fall in domestic demand for oil products.

On April 1, 1982, the Government of Canada announced an action program designed to increase use of domestic oil production.

The results of the April 1, 1982 program are still incomplete, but there is a clear indication that it will have a positive impact on the shut-in oil situation. Shut-ins are expected to fall substantially in May and could be reduced to close to zero in June.



Western Canadian oil is brought to the surface.

NFB Photothèque Photo.

In the future, it is possible that a continued decline in Canadian oil demand could cause a recurring risk of shut-in oil over the short term. In addition, when high synthetic oil output coincides with reduced refinery requirements for technical reasons, the volume of shut-in conventional oil may be substantial.

Despite favourable import trends, eastern Canada is likely to continue to depend on imports to meet at least some of its oil requirements for some years, and should maintain traditional import relationships.

Nevertheless, measures are needed to reduce the shut-in over the coming year. During that period, it should become clearer whether Canada's long-term import needs have been permanently reduced.

New Measures

To alleviate further the shut-in problem, the Government of Canada is taking additional measures. It will:

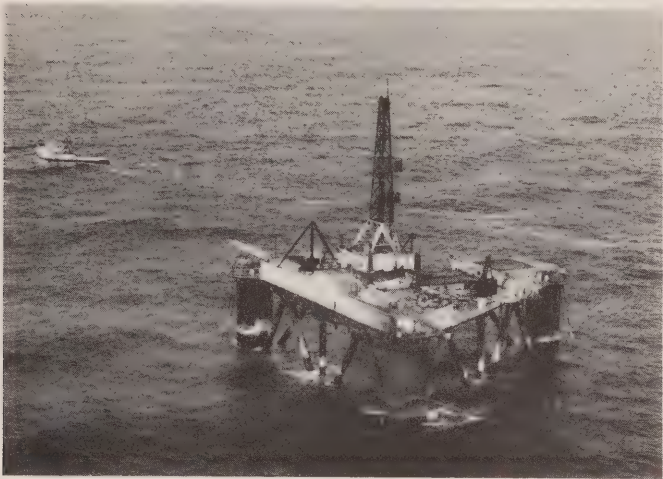
- Restrict Canadian refiners to importing only the minimum of crude oil under term contracts as needed to ensure long-term access to oil imports, with no import of oil outside these contracts;
- Adjust the method of calculating the Oil Import Compensation Program flat rate. Formerly, the rate was set prior to the month in which it was to be applied using estimates of prices likely to prevail. Effective April 1, 1982, the system has been modified so that in all cases actual rather than estimated costs will be used;
- Initiate a program to purchase some additional volumes of western Canadian crude oil for storage. The stored oil would be disposed of at a time when its use would not affect domestic crude oil production, possibly as early as the last half of 1983;
- Provide, in special circumstances, financial support to assist the movement of western crude oil to eastern Canada via exchanges with U.S. refiners. The Government of Canada is prepared to examine on a case-by-case basis applications for financial assistance by refiners wishing to make such exchanges.

4. Oil and Gas Revenue

The National Energy Program put in place several measures designed to stimulate new oil and natural gas exploration and production, reduce demand for petroleum products and increase Canadian participation in the oil and gas industry.

Progress on these measures has been good in some respects. But Canada's oil and gas industry has recently experienced a variety of problems.

The world economic slowdown has had important repercussions for the industry. It has depressed gas export markets and demand for both oil and



Tug boat pulls away from drilling rig off Canada's east coast.

Canadian Pacific Photo.

gas. Returns for exploration and development firms that also operate in the downstream have dropped. High interest rates imported from abroad particularly hurt many smaller firms. General economic conditions have weakened equity markets, making new sources of capital difficult to obtain. The softening of international oil prices has prevented expected increases in gas export prices, and created some uncertainty among firms about the expected rate of return on their investments.

Consequently, many firms, large and small, have curtailed exploration activity. Financial difficulty experienced by smaller oil and gas firms is of particular concern since they have played an important role in many recent oil discoveries.

Alberta has taken steps to assist the industry by reducing royalties and by direct financial incentives and Saskatchewan is expected to follow suit. However, the Government of Canada considers a healthy, active oil industry in western Canada to be of such importance to the health of the Canadian economy that it has introduced powerful new measures to bolster the industry's capacity to invest in new petroleum exploration.

Following are the major measures the Government of Canada is undertaking to assist the oil and natural gas industry.

Taxation

1. The Petroleum and Gas Revenue Tax (PGRT) will be reduced from 16 per cent to 14.7 per cent between June 1, 1982 and May 31, 1983. This reduction will be extended to both production and royalty revenue. For

production revenue, this will result in a reduction in the effective tax rate from 12 to 11 per cent after the resource allowance deduction. This measure will provide the industry with \$200 million in benefits between 1982 and 1986.

2. The Government will provide an annual credit of up to \$250,000 to corporations to offset the PGRT. It will be available to offset taxes on production revenue earned after May 31, 1982. Only one credit will be allowed for groups of associated companies, which will apportion the credit among themselves. This will provide about \$900 million to firms between 1982 and 1986.
3. The effective rate of the Petroleum and Gas Revenue Tax on production revenue from synthetic oil production from integrated oil sands plants will be reduced from 12 per cent to 8 per cent between January 1, 1983 and December 31, 1984. This will increase the cash flow for the two existing synthetic oil plants by \$125 million between 1982 and 1986.
4. The Incremental Oil Revenue Tax (IORT) will be suspended between June 1, 1982 and May 31, 1983, providing about \$250 million in benefits for those firms that are aggressive re-investors of profit.

Pricing

1. There will be a wellhead price increase for oil discovered after 1973 and which qualifies for provincial royalties at new oil rates, but which does not receive the New Oil Reference Price (NORP). On July 1, 1982, the price will rise to 75 per cent of the world price and remain at this level (subject to a ceiling of 75 per cent of the world price) until the "old oil" price reaches this level. When this occurs, all old oil — oil discovered before 1981 — will again receive the old oil price. This acceleration in price will provide an additional \$100 million in revenues for companies that discovered oil in this period.
2. Beginning January 1, 1983, NORP will be extended to existing tertiary recovery projects which pay royalties no higher than those applicable to new oil.
3. NORP will also be extended to all experimental projects which pay a royalty no greater than five per cent of gross revenue and to oil wells that have been suspended for at least three years, provided production from these wells qualifies for new oil royalties. Both extensions will begin January 1, 1983. These provisions will provide an additional \$500 million to these producers.

With these changes, the industry will have sufficient cash flow and the necessary incentives to get on with the job of finding and developing new oil for Canada.

OUTLOOK

1. Oil and Gas Revenues and Incentives

These new measures, along with other measures introduced by the Government of Canada since the agreement with Alberta last September, combined with slow growth in international prices will, if the price forecast is fulfilled, result in sharply lower Government revenues than originally anticipated.

Comparison of Projected Revenues now
with those anticipated in September, 1981
for the period 1981-1986

	September 1981		Now		Change	
	\$ Billions	%	\$ Billions	%	\$ Billions	%
Canada	61	29	36	22	-25	49
Province	75	35	53	32	-22	43
Industry**	78	36	74	46	-4	8
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	214	100	163	100	-51	100

*Incorporates Alberta April 13 measures and federal measures in this document.

**Net of Operating Costs.

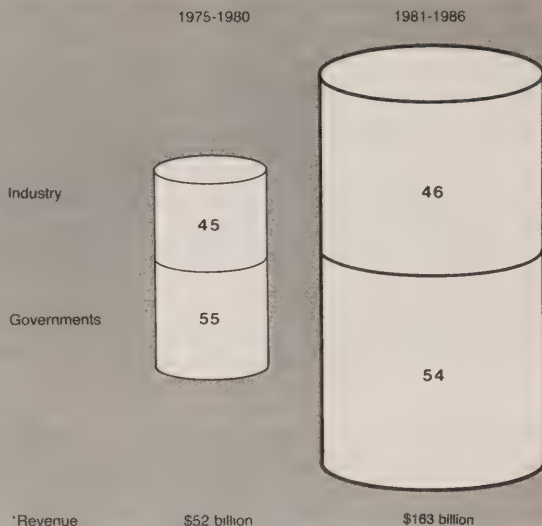
This decrease is in accordance with a fair sharing system which gives governments a larger share of revenue when prices and profits are high and a substantially smaller share in periods of declining profit and revenues.

Projected provincial revenues have also fallen. However, as a result of the measures now announced by the Government of Canada, provincial revenues in the form of corporate income tax and royalties will increase by more than \$300 million between now and 1986.

The Alberta government was concerned that the Government of Canada would tax a portion of the benefits resulting from its royalty reductions through the Incremental Oil Revenue Tax. These new measures ensure that all of this revenue, and much more, will go to the industry.

Although the international price of oil has not increased as quickly as originally predicted and demand for oil is down in Canada, the petroleum industry's share of revenues will remain relatively stable. Almost all of the

Revenue Sharing: Then and Now



*Net production revenue plus the downstream taxes specified in federal-provincial agreements.

revenue decrease will be borne by the Governments of Canada and Alberta. Industry's share of the revenue from petroleum development will rise from the 36 per cent anticipated last September to 46 per cent now.

There has been some criticism that the fiscal regime introduced by the National Energy Program, and since modified, has improved the Government of Canada's fiscal position at the expense of the industry. This is not so. Between 1975 and 1980, the industry received approximately 45 per cent of petroleum revenues, compared with the 46 per cent it can be expected to receive between 1981 and 1986.

The industry is now in a strong position to move ahead aggressively. Netbacks to large firms for old oil will more than double between 1981 and 1986. Netbacks on oil receiving the New Oil Reference Price will more than triple. Larger companies producing previously discovered natural gas will receive netbacks that will increase by almost 90 per cent over the period to 1986. Netbacks for newly-discovered gas will increase approximately 70 per cent.

Smaller firms will be helped dramatically through the exemption from the Petroleum and Gas Revenue Tax. Companies with net production income of up to \$2 million will not have to pay this tax, and if they aggressively re-invest, they will pay no income tax. Less than 100 petroleum firms will continue to pay the PGRT.

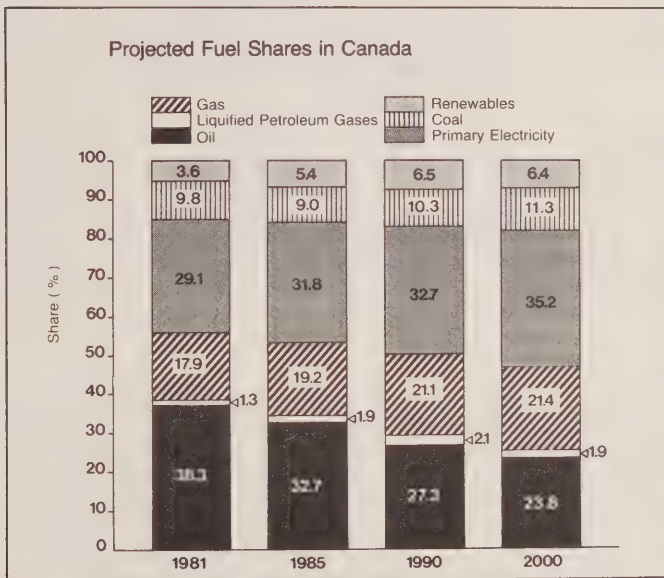
Smaller firms that have consistently performed aggressively become very attractive investment vehicles for Canadian investors.

2. Oil Supply and Demand

Total petroleum product demand in 1990 is projected to be about 18 per cent less than in 1980. Oil's share in total primary energy demand is expected to fall from 39 per cent in 1981 to 27 per cent in 1990.

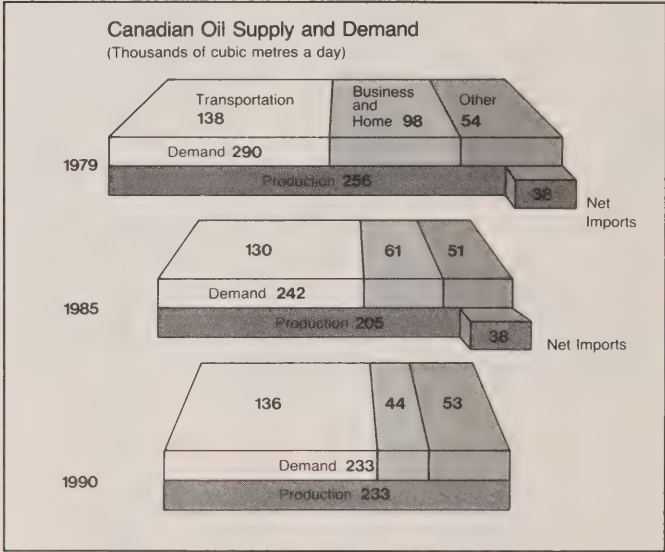
The incentive to develop new oil in the western producing provinces and the Canada Lands compares favorably with any offered elsewhere in the world. The onus is now on the industry to seek out this new oil and help bring Canada's oil demand and supply in balance with the decade.

Oil production from existing conventional reserves in western Canada will continue the decline started in the last decade. However, the measures announced here in combination with the energy agreements with the produc-



ing provinces and changes by the Government of Alberta greatly increase the incentive to develop new oil in the western provinces. This new development should offset declines in existing reserves.

In terms of the overall supply-demand balance, Canada is doing better so far than had been anticipated in the 1980 NEP forecast. If present demand trends persist — and many experts believe they will — Canada’s oil imports will fall substantially in the early 1980s, rather than rise over 1980 levels, as had been earlier projected. We are moving much more quickly towards independence from the world oil market than had been expected by the Government of Canada in October 1980.



3. Canadianization

Excellent progress has been made in achieving the National Energy Program’s goal of 50 per cent Canadian ownership, and Canadian control, of the oil industry by 1990. Already, five of the 15 largest oil and gas companies are now Canadian-controlled. Major multi-national companies, such as Esso, Gulf and Shell, have announced arrangements to farm-out a portion of their activity to Canadian interests. The Government of Canada welcomes the apparent shift in emphasis in the Canadian private sector to increase its involvement in the industry through farm-outs and joint ventures with

**The Largest Oil and Gas Producing Companies
as of December 1981
(by upstream revenue)**

<i>Rank</i>	<i>Foreign Controlled</i>	<i>Canadian Controlled</i>
1.....	Imperial (1)	
2.....	Gulf (2)	
3.....	Texaco (3)	
4.....		Petro-Canada (7)*
5.....	Shell (4)	
6.....	Amoco (5)	
7.....		Dome (12)†
8.....	Mobil (6)	
9.....	Suncor (10)	
10.....	Chevron Standard (9)	
11.....		Pan Canadian (11)
12.....		Canterra (14)‡
13.....	Canadian Superior (13)	
14.....	Canada Cities (17)	
15.....		Norcen (15)

Figures in parentheses indicate ranking in 1979.

*Includes Petrofina.

†Includes Hudson's Bay Oil and Gas.

‡Includes Aquitaine, CDC Oil and Gas and Texasgulf.

foreign-controlled companies. This will help lay the groundwork for realizing the Government's goal of having a strong Canadian component, second to none in its capacity for finding and developing new oil, working alongside a strong group of foreign-controlled companies, that enjoys opportunities and profits at least as good as those around the world.

Progress in meeting our goal of 50 per cent Canadian ownership will depend partly on the degree of farm-ins and partly on the level of further acquisitions. Although Canadians found more new oil in the western provinces than foreign-owned companies between 1974 and 1981, those larger companies still have the best land position in both the provinces and the Canada Lands. Opening up the Canada Lands, so that Canadians can participate more fully in exploration for new oil, is a critical element of the Canadianization policy.

4. The Consumer

The National Energy Program has provided very large benefits to consumers through its commitment to keep the Canadian oil price below the world price, and to provide attractively-priced alternatives to oil.

Conservatively estimated, these pricing policies will save Canadians \$39 billion in oil costs and \$21 billion in natural gas costs compared with world price levels between 1981 and 1986, the life of the energy agreements reached with the producing provinces last fall. The ceiling on basic price

increases would create a \$2,500 benefit to every Canadian — and the benefit would be considerably higher if world prices should jump again as in the past.

The pricing policy protects consumers from dramatic increases in international oil prices, and passes on benefits from reductions. Last fall, it was assumed the Petroleum Compensation Charge (PCC), an important element of the oil price, would have to rise to pay for increased imports. However, oil imports will be lower than anticipated and the world oil price has softened somewhat so that no increase in the PCC will be required and there may even be decreases. This would partly offset scheduled price increases at the wellhead.

The news for natural gas is even better. Wholesale natural gas prices should be lower than those anticipated when the federal government reached a comprehensive energy agreement with Alberta last fall. As with blended oil



*Machinery and men assemble natural gas pipeline over rough terrain.
Canadian Pacific Photo.*

prices, lower natural gas prices are the result of lower federal taxes. The Government of Canada now intends to freeze the Natural Gas and Gas Liquids Tax at its current level for 1982, as part of its commitment to keep wholesale natural gas prices at approximately two-thirds that of oil.

Over the life of these energy agreements, consumer energy costs in Canada will be the lowest of any industrialized country.

The cost of heating an average home with oil in Canada is approximately \$1,025 — 25 per cent less than heating the same home in the United States. If oil consumers use the \$500 federal Canadian Home Insulation Program grant, they could save a further \$255. A further \$200 saving could be achieved by taking advantage of the \$800 Canadian Oil Substitution Program grants to switch off oil.

The made-in-Canada pricing system also protects consumers at the gas pumps. Even now, the basic blended consumer oil price is only 71 per cent of the world level. The pricing system has kept Canadian gasoline price levels below U.S. levels since 1979.

Some provinces now levy substantial retail sales tax on gasoline, effectively eliminating the price advantage offered by the federal pricing system. Even with these provincial retail sales taxes, Canadian and American gasoline prices are roughly comparable. And Canadian prices are well below prices in many other countries.

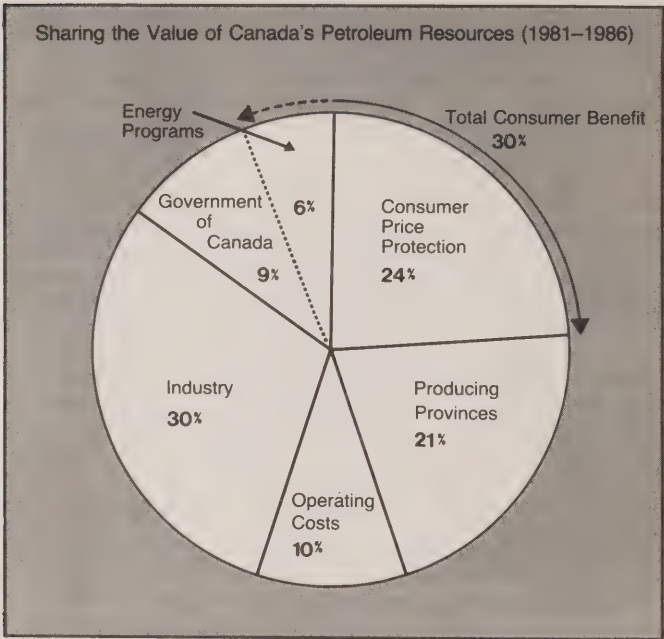
An International Comparison of Gasoline Prices

Canadians often lose track of just how reasonable our petroleum prices are relative to other countries. While domestic prices have increased, the table below demonstrates that our gasoline prices are far below levels in other industrialized countries.

	Canada	U.S.A.	United Kingdom	France	Italy	West Germany
January, 1981	30.6	38.9	82.1	88.3	101.5	73.6
July, 1981	36.4	42.1	80.3	77.5	86.2	73.0
January, 1982	39.3	40.5	81.9	83.7	93.3	74.5
Higher than in Canada by		3%	108%	113%	137%	90%

All prices in Canadian cents per litre.

Consumers, in a very real sense, share directly in the value of Canada's energy resources, both through lower prices and through the value of Federal Energy Programs that have been established to encourage the development of additional sources of energy and to assist conservation and substitution efforts. The following tables set out how the value of Canada's energy resource is divided, and the value and status of National Energy Program measures.



Energy Programs
1981-82 to 1984-85

<i>Program</i>	<i>Cost</i>	<i>Status</i>
	(\$ millions)	
Industry Incentives	4,600	
Petroleum Incentives Program		Bill C-104 currently before Parliament
Oil Substitution	1,540	
Canada Oil Substitution Program		Operational
Conversion of Federal Buildings		Operational
Distribution System Expansion Program		Operational
Transmission System Expansion Program		Announced in this document
Propane Vehicle Initiative		Operational
Propane Demonstration (Government Fleets)		Operational
Conservation and Renewable	1,390	
Canadian Home Insulation Program		Operational
Canertech		Operational
National Energy Audit Program		Operational
Industrial Energy Management Program		Operational
Motor Vehicles Fuels Consumption Standards		Bill C-107 currently before Parliament
Retrofit of Federal Buildings		Operational
Remote Community Demonstration		Announced
Solar Demonstration (Residential Hot Water)		Operational
FIRE Extension		Operational
Agricultural Sector Initiatives		Under development
Super Energy Efficient Housing		Operational
Small Projects Fund		Operational
Special Atlantic Program	530	
Utility Off-Oil Fund		Operational
Lower Churchill Development Corporation		Delayed
Coal Utilization Package		Operational
Coal R&D		Operational
P.E.I. Conservation and Renewable Energy		Operational
Atlantic Energy Conservation Investment Program		Operational
Upgraders	330	Under development
Research and Development	500	Operational
Petro-Canada International	220	Operational
Sub-total	9,110	
Pre-NEP Initiatives	4,270	
Total	13,380	



